REMARKS

Claims 1-20 were pending in this application.

Claims 1-20 have been rejected.

No claims have been amended.

Claims 21-40 have been added.

Claims 1-40 are now pending in this application.

Reconsideration and full allowance of Claims 1-40 are respectfully requested.

I. AMENDMENTS TO DRAWINGS AND SPECIFICATION

The Applicants have amended the drawings and specification to include subject matter recited in U.S. Patent Application Serial No. 09/751,678. The contents of U.S. Patent Application Serial No. 09/751,678 were incorporated by reference into this patent application. As a result, these amendments do not add any new matter to this patent application. Moreover, new Claims 21-40 are directed to the newly incorporated subject matter, so Claims 21-40 also do not add any new matter to this patent application.

II. REJECTION UNDER 35 U.S.C. § 102

The Office Action rejects Claims 1-13 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,991,080 to Emma et al. ("*Emma*"). The Applicants respectfully traverse this rejection.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if

every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. (*MPEP § 2131; In re Bond, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990)*). Anticipation is only shown where each and every limitation of the claimed invention is found in a single prior art reference. (*MPEP § 2131; In re Donohue, 766 F.2d 531, 534, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985)*).

The Office Action asserts that elements 301 and 501 of *Emma* anticipate a "branching cluster" as recited in Claims 1 and 8. (*Office Action, Page 2, Last paragraph*). The Office Action also asserts that elements 201, 401, 601, and 701 of *Emma* anticipate a "non-branching cluster" as recited in Claims 1 and 8. (*Office Action, Page 2, Last paragraph*).

Based on this, the Patent Office must show that elements 201, 401, 601, and 701 of *Emma* (the "non-branching cluster") are "incapable of performing branch address computations" as recited in Claims 1 and 8. The Office Action asserts that *Emma* anticipates these elements of Claims 1 and 8 because the "main stream processor, element 701, is incapable of performing the pre-execution of branch instructions, or branch address computations, that the branch stream co-processor, element 501, performs." (*Office Action, Page 2, Last paragraph – Page 3, First paragraph*). The Office Action cites column 7, lines 22-36 of *Emma* for support.

First, it is irrelevant whether the main stream processor 701 of *Emma* is "incapable of performing the pre-execution of branch instructions, or branch address computations, that the branch stream co-processor ... performs." This statement makes it appear as if the Patent Office believes *Emma* can anticipate Claims 1 and 8 even if the main stream processor 701 performs branch address computations, as long as the branch address computations performed by the main

stream processor 701 are not the same branch address computations performed by the branch stream co-processor 501. This is improper.

Claims 1 and 8 are crystal clear – the "non-branching cluster" is "incapable of performing branch address computations." Therefore, the only issue is whether the main stream processor 701 of *Emma* is "incapable of performing branch address computations." If the main stream processor 701 of *Emma* is capable of performing branch address computations, *Emma* cannot anticipate Claims 1 and 8. It does not matter whether the main stream processor 701 performs branch address computations that are different from the branch address computations performed by the branch stream co-processor 501.

Second, *Emma* clearly recites that the main stream processor 701 is capable of performing branch address computations, and the Office Action's assertions are contradicted by the express recitations of *Emma*. *Emma* expressly recites that the main stream processor 701 is capable of performing branch address computations. Specifically, *Emma* expressly recites that (i) the branch stream co-processor 501 may be unable to resolve a branch instruction, (2) the main stream processor 701 may perform an address generation step 729 to generate a target address for that branch instruction, and (3) the target address generated during step 729 is used to resolve the branch instruction. (*Col. 21, Lines 6-9; Col. 22, Lines 26-49*).

It is absolutely clear here that the main stream processor 701 of *Emma* is capable of performing branch address computations for a branch instruction. Column 21, lines 6-9 of *Emma* clearly recite that the main stream processor 701 performs an address generation step 729, and column 22, lines 26-49 clearly recite that a target address for a branch instruction is

determined as part of the address generation step 729. Because of this, the Patent Office's assertion that the main stream processor 701 cannot perform branch address computations is contradicted by the express recitations of *Emma*.

Third, the portion of *Emma* cited in the Office Action (column 7, lines 22-36) simply recites that the branch stream co-processor 501 pre-executes a branch instruction and a condition code setting instruction (which determines whether the branch is taken). This is done in the "branch stream" rather than the "main stream," which helps to reduce delays in the main stream.

This portion of *Emma* never recites that the main stream processor 701 is incapable of performing branch address computations. Moreover, in the very next paragraph, *Emma* specifically recites that some branch instructions will remain undecoded because those branch instructions cannot be resolved until they are actually executed. (*Col. 7, Lines 44-46*). In other words, the branch stream co-processor 501 cannot pre-execute all branch instructions. Some branch instructions are resolved by the main stream processor 701, which (as noted above) computes the target addresses for those branch instructions.

Emma is crystal clear – the main stream processor 701 computes the target addresses for some branch instructions. Therefore, the main stream processor 701 of *Emma* cannot possibly anticipate a "non-branching cluster" that is "incapable of performing branch address computations" as recited in Claims 1 and 8.

For these reasons, the Office Action does not establish that *Emma* anticipates the Applicants' invention as recited in Claims 1 and 8 (and their dependent claims). Accordingly, the Applicants respectfully request withdrawal of the § 102 rejection and full allowance of

Claims 1-13.

III. REJECTION UNDER 35 U.S.C. § 103

The Office Action rejects Claims 14-20 under 35 U.S.C. § 103(a) as being unpatentable over *Emma* in view of U.S. Patent No. 4,777,589 to Boettner et al. ("*Boettner*"). The Applicants respectfully traverse this rejection.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. (*MPEP § 2142; In re Fritch, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992)*). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. (*MPEP § 2142; In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984)*). Only when a *prima facie* case of obviousness is established does the burden shift to the applicant to produce evidence of nonobviousness. (*MPEP § 2142; In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); In re Rijckaert, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993)*). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. (*In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); In re Grabiak, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985)*).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. (*In re Bell, 991 F.2d*

781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993)). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (*MPEP § 2142*).

As described above in Section I, the Office Action does not establish that *Emma* anticipates a "non-branching cluster" that is "incapable of performing branch address computations." The Office Action cites *Boettner* only as allegedly reciting a "plurality of peripheral circuits." The Office Action does not rely on *Boettner* as disclosing, teaching, or suggesting a "non-branching cluster" that is "incapable of performing branch address computations" as recited in Claim 14.

For these reasons, the Office Action does not establish a *prima facie* case of obviousness against Claim 14 (and its dependent claims). Accordingly, the Applicants respectfully request withdrawal of the § 103 rejection and full allowance of Claims 14-20.

IV. NEW CLAIMS

The Applicants have added new Claims 21-40. The Applicants respectfully submit that no new matter has been added. The Applicants respectfully submit that Claims 21-40 are

patentable over the cited art. The Applicants respectfully request entry and full allowance of Claims 21-40.

V. CONCLUSION

The Applicants respectfully assert that all pending claims in this application are in condition for allowance and respectfully request full allowance of the claims.

SUMMARY

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Applicants respectfully invite the Examiner to contact the undersigned at the telephone number indicated below or at *wmunck@davismunck.com*.

The Applicants have included the appropriate fee to cover the cost of the additional claims added in this SUPPLEMENTAL AMENDMENT AND RESPONSE. The Commissioner is hereby authorized to charge any additional fees connected with this communication (including any extension of time fees) or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

Date: Nov. 7, 2005

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IN THE DRAWINGS

Please renumber Figure 2 as Figure 2A. Please add new Figure 2B and new Figure 9.

The Applicants hereby submit replacement sheets incorporating these amendments to the figures.